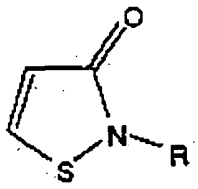
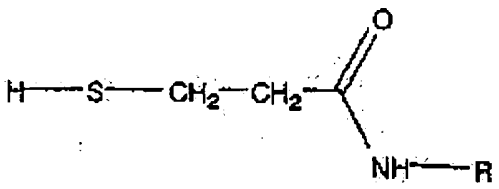
20. (Amended) A method of producing 2-alkyl-4-isothiazoline-3-one represented by the general formula (III),



wherein the compound represented by formula (I),



is reacted with chlorine (Cl_2) as a chlorinating agent in a solvent,

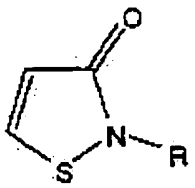
wherein the molar-equivalent ratio of said chlorinating agent to the compound of formula (I) is 2:1,

wherein R in the compounds of formulas (I) and (III) represents C1 to C8 alkyl groups or aralkyl groups, and

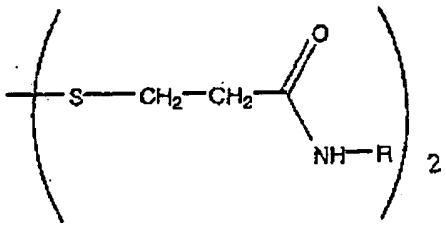
wherein the 2-alkyl-4-isothiazoline-3-one of Formula III produced contains less than 1.0% of 5-chloro-2-alkyl-4-isothiazoline-3-one.

Please add new claims 24-27

24. A method of producing 2-alkyl-4-isothiazoline-3-one represented by the general formula (III),



wherein the compound represented by formula (II),



is reacted with chlorine (Cl_2) as a chlorinating agent in a solvent,

wherein the molar-equivalent ratio of said chlorinating agent to said the compound of formula (II) is 3:1,

wherein R in the compounds of formulas (II) and (III) represents C1 to C8 alkyl groups or aralkyl groups, and

wherein the 2-alkyl-4-isothiazoline-3-one of Formula III produced contains less than 1.0% of 5-chloro-2-alkyl-4-isothiazoline-3-one.

25. The method of producing 2-alkyl-4-isothiazoline-3-one stated in Claim 24 in which the 2-alkyl-4-isothiazoline-3-one of Formula III produced contains less than 0.5% of 5-chloro-2-alkyl-4-isothiazoline-3-one.

26. The method of producing 2-alkyl-4-isothiazoline-3-one stated in Claim 24 in which the chlorine (Cl_2) chlorinating agent is a gas.

27. The method of producing 2-alkyl-4-isothiazoline-3-one stated in Claim 20 in which the chlorine (Cl_2) chlorinating agent is a gas.